Armed Forces College of Medicine

AFCM

Irritable Bowel Syndrome

Integrated Lecture

Indented Learning Outcomes (ILOs)

By the end of this lecture the student will be able to:

- Define functional GIT Disorders
- Know criteria of IBS
- Understand types and prevalence of IBS
- Differentiate between organic and functional bowel disease
- Diagnose cases of IBS
- Understand lines of management of IBS

Irritable bowel syndrome

- Irritable bowel syndrome is one the term psychosomatic disorder
- psychosomatic disorder is mainly used to mean ... physical diseases are thought to be particularly prone to be made worse by mental factors such as stress and anxiety
- One’s current mental state can affect how bad a physical disease is at any given time.

Functional Gastrointestinal Disorder

- Irritable bowel syndrome
- Peptic ulcer
- Functional Dyspepsia
- Crohn’s
- Constipation
- Functional Vomiting
- Functional Abdominal Pain

Functional Gastrointestinal Disorder

- **50 -80%** of people with FGID symptoms do not consult a physician.
- They may take over-the-counter medications and report significantly more job absenteeism.

Role of psychosocial factors

1)Psychological stress exacerbates GI symptoms.

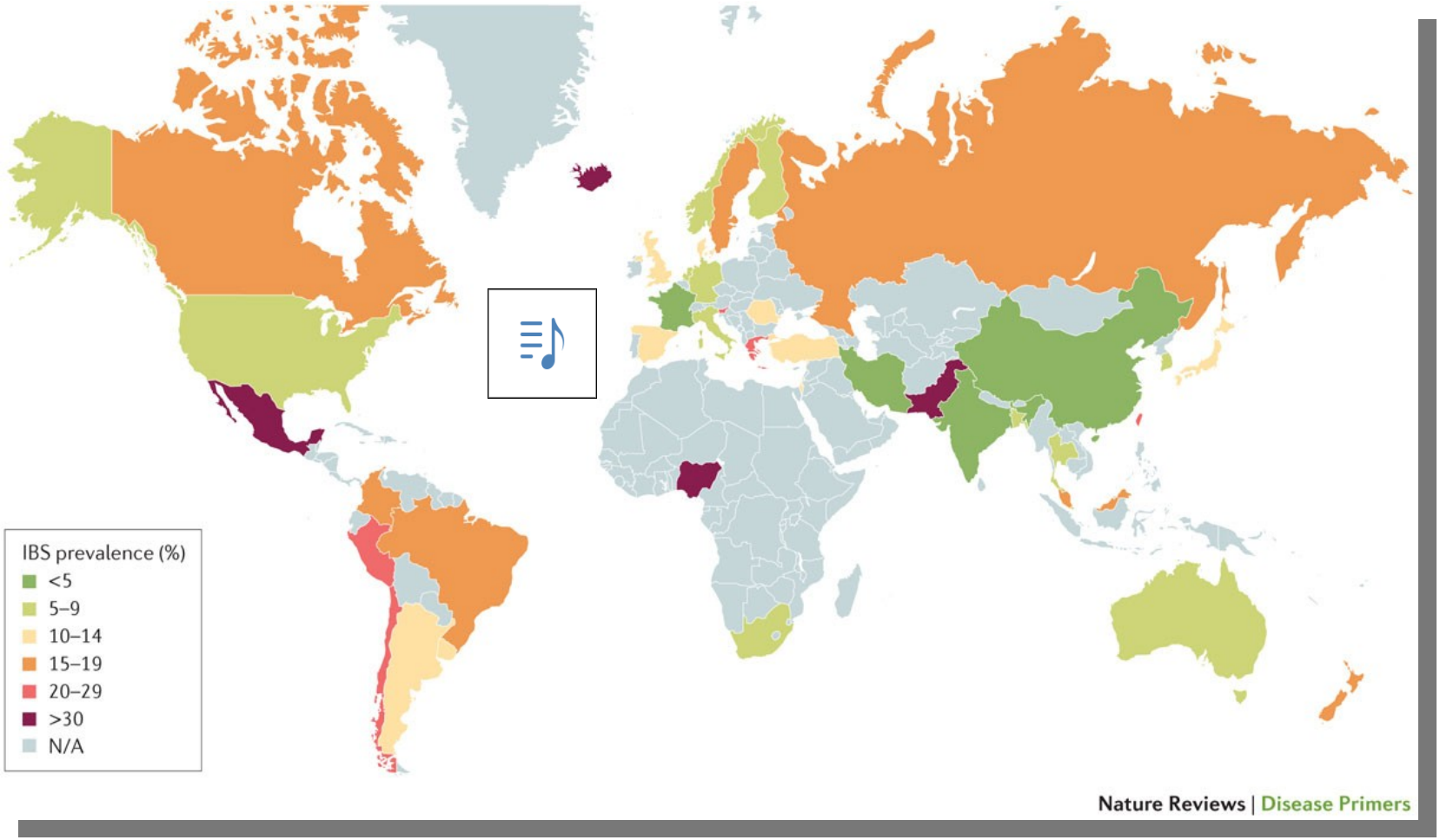
2)Psychological disturbances modify the experience of illness and illness behaviors such as health care seeking.

3) Psychosocial factors affect health status and clinical outcome.

Rome IV Criteria for IBS

- **The Rome IV criteria for the diagnosis of irritable bowel syndrome require that patients have had recurrent abdominal pain on average at least 1 day per week during the previous 3 months that is associated with two or more of the following :**
  - Related to defecation (may be increased or unchanged by defecation)
  - Associated with a change in stool frequency
  - Associated with a change in stool form or

IBS Prevalence



Enck, P. *et al.* (2016) Irritable bowel syndrome
Nat. Rev. Dis. Primers doi:10.1038/nrdp.2016.14

Types

- IBS-D (diarrhea predominant)
- IBS-C (constipation predominant)
- IBS-M (mixed diarrhea and constipation)
- IBS-U (unclassified)

Symptoms

- **Altered bowel habit may include:**

- Constipation, narrow caliber stool , painful or infrequent defecation
- Diarrhea as loose stool, urgency or frequent defecation
- Postprandial urgency
- Alternation between constipation and diarrhea

Symptoms

- Pain might be diffuse
- Usually in the left lower quadrant
- Acute episodes of sharp pain are often
- Defecation commonly improves pain

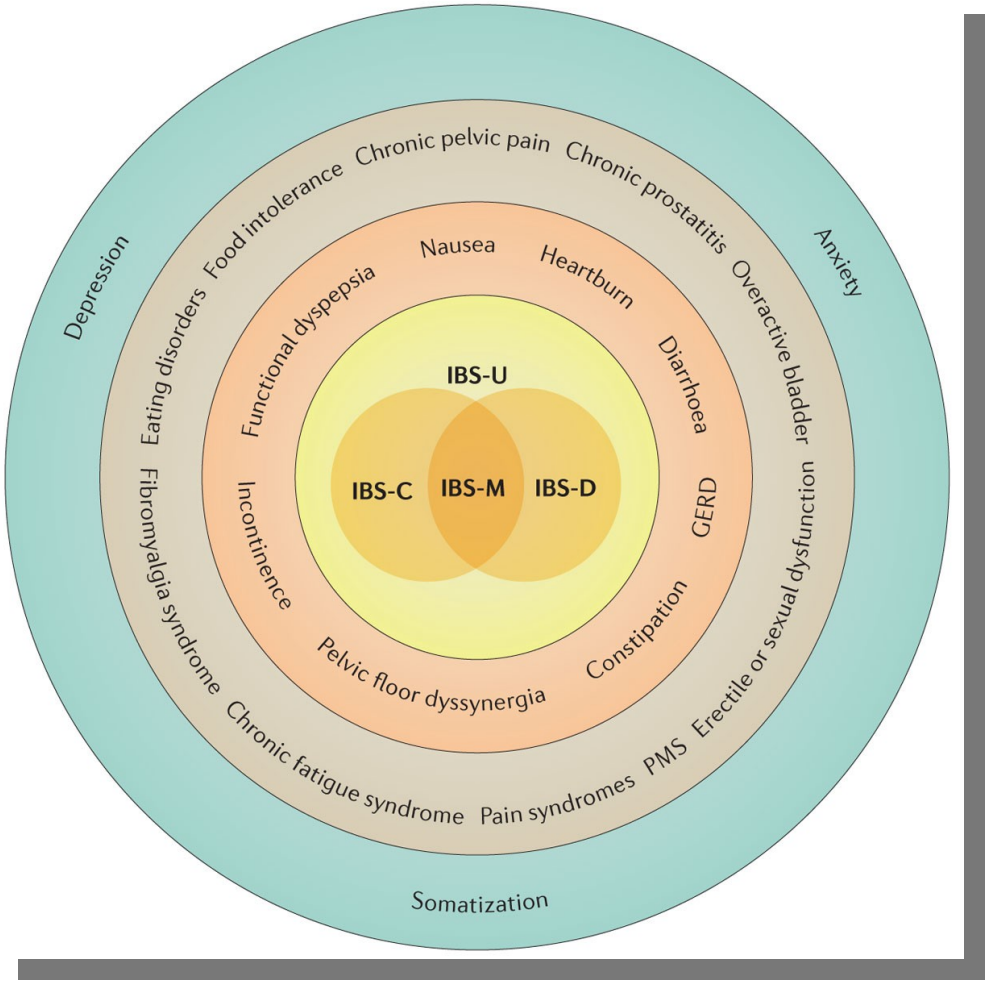
Alarm Symptoms

- **Alarm features:**
  - Old Age
  - Weight loss
  - Anemia
  - Bleeding
  - Family history of organic disease in GIT
  - Abnormal lab test results

Possible causes of IBS

- Transient Infection
- Increased Mucosal Permeability
- Dysbiosis (Altered GI Microbiome)
- Bile Acid Malabsorption
- Altered Endocrine Metabolism (Serotonin)
- Genetic Pleomorphism
- Food Hypersensitivity (Allergy)

IBS Associations



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Irritable bowel syndrome (IBS)

- It is abdominal pain associated with altered bowel habits of diarrhea, constipation or alternating between both.
- IBS is characterized by changes in motility in response to environmental or enteric stimuli
- It has been reported that **IBS** is the **second** leading cause, after the common cold

Differential Diagnoses

- Dietary – e.g. lactose intolerance, ↑ caffeine etc.
- Infections – Giardia, Bacterial Overgrowth Syndrome
- Inflammatory Bowel Disease – UC, CD,
- Microscopic Colitis
- Malabsorption syndrome – Celiac Disease
- Pancreatic Insufficiency
- **Psychological – Depression Anxiety, Somatization, chronic eating disorder**

How to diagnose IBS?

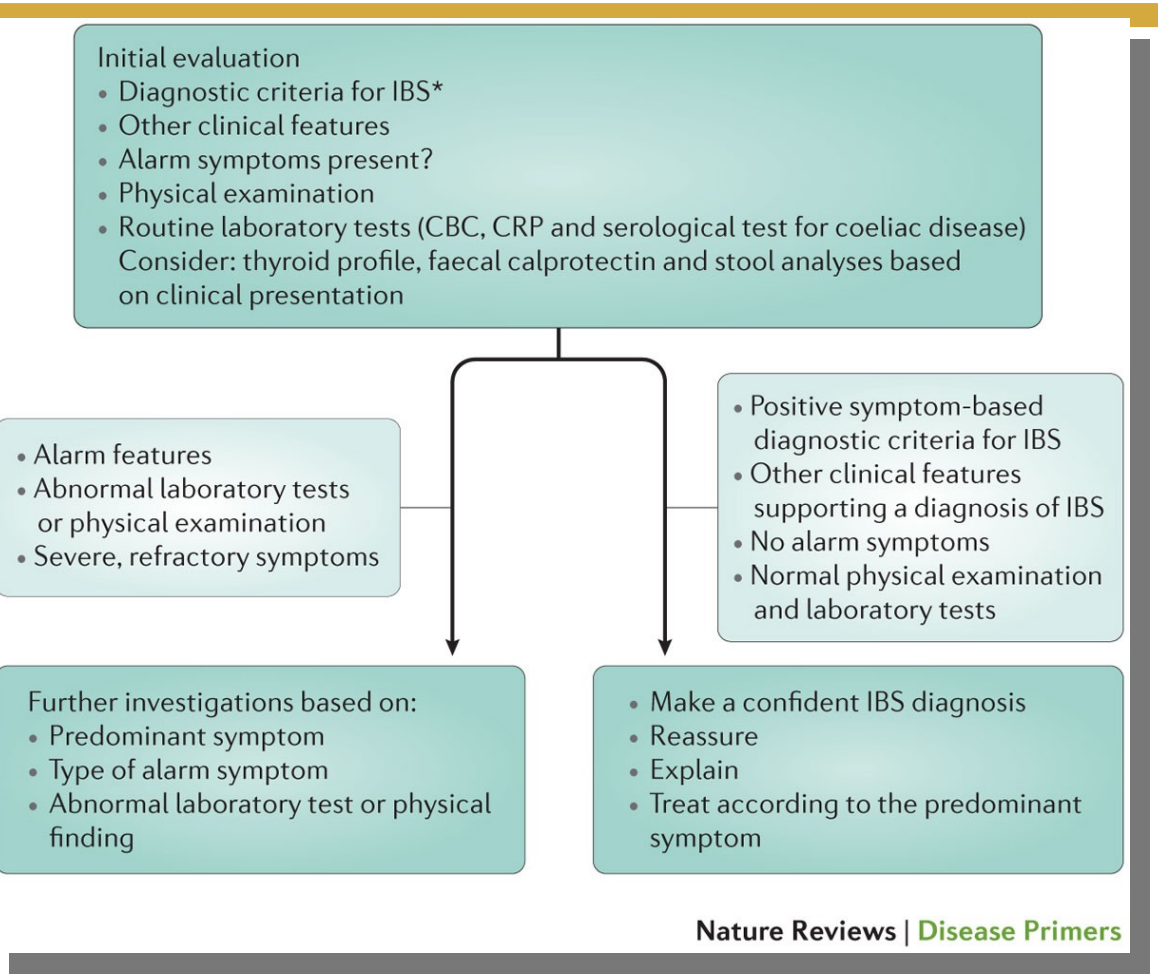

Figure from Gunnarsson, J. & Simren, M. Efficient diagnosis of suspected functional bowel disorders. *Nat. Clin. Pract. Gastroenterol. Hepatol.* **5**, 498–507 (2008), Nature Publishing Group

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How to treat IBS?

- Diet
- Exercise
- Psychotherapy
- Medications

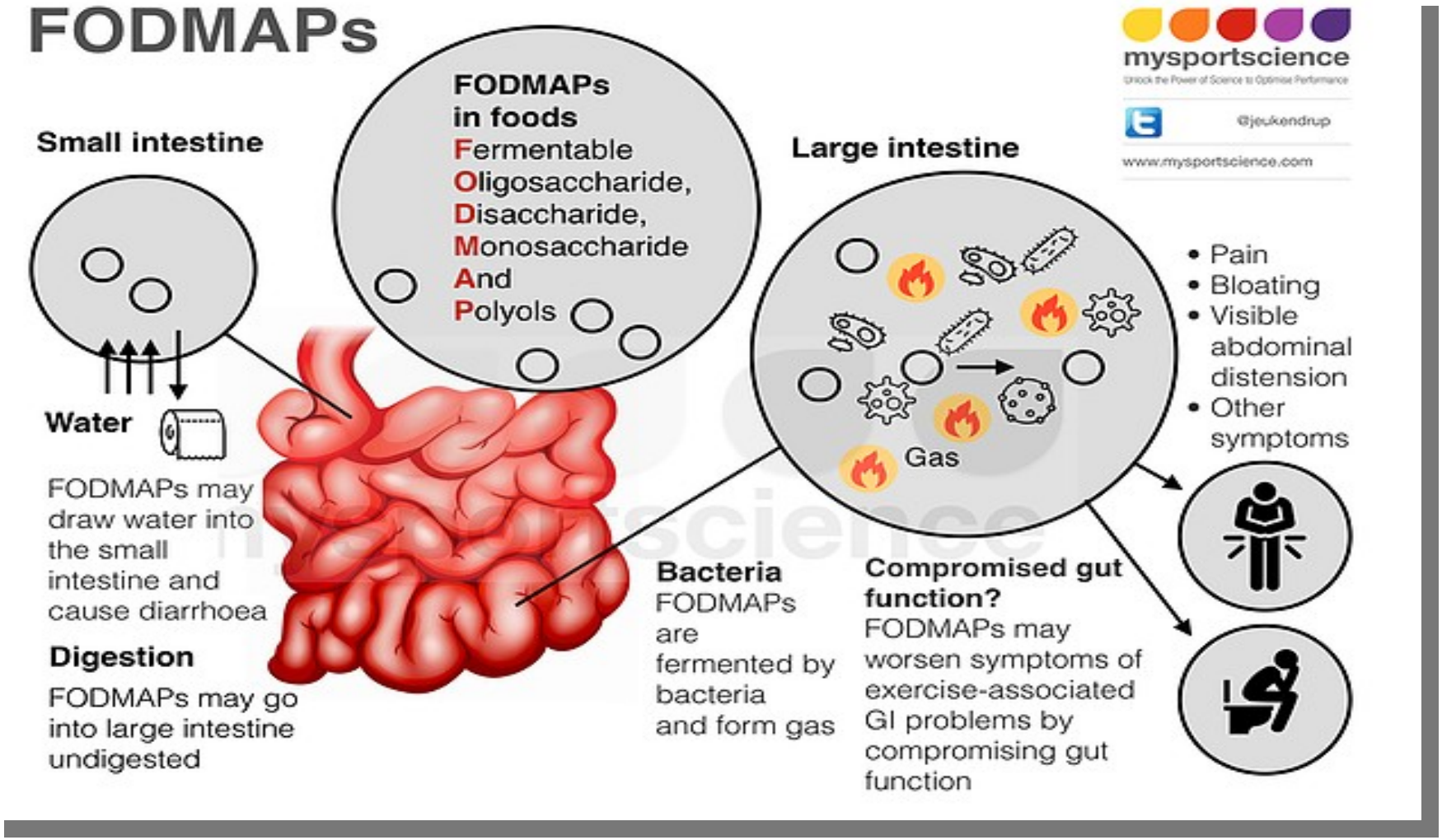
Do and Don't

- Gain the confidence of the patient at the first consultation, let them talk and just listen
- Remain aware that some IBS patients have a hidden agenda
- Do not say to the patient "I don't know what is wrong with you."
- Do not say what some Specialists say, namely: "There is nothing wrong with you" or "it is in head."

Diet

ACG suggests a low FODMAP diet for overall symptom .improvement in IBS patients
ACG suggests against a gluten-free or exclusion diet based upon antibody or leukocyte .activation test patients

FODMAP Diet


FODMAPs
mysportscience
Unlock the Power of Science to Optimise Performance
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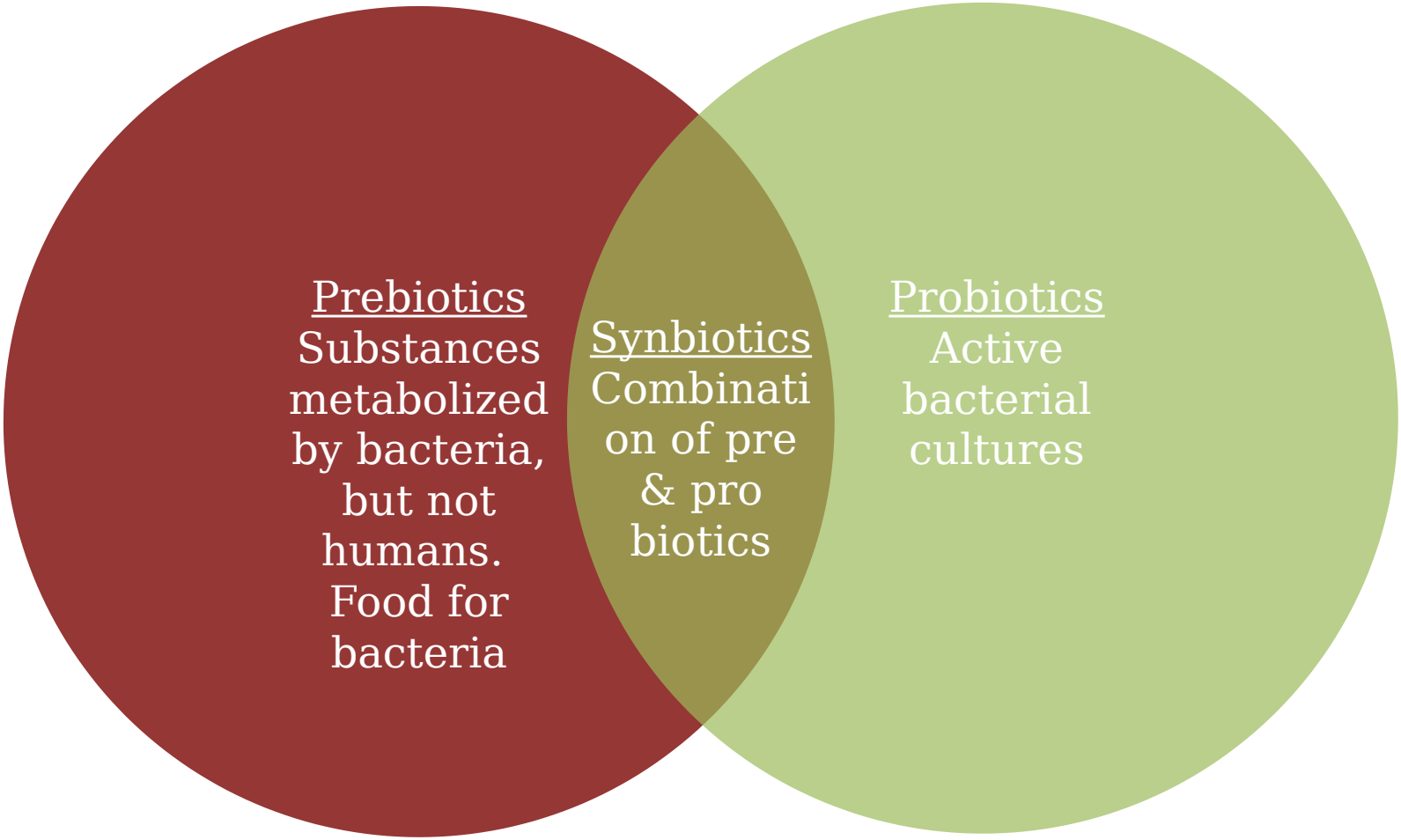
www.mysportscience.com
FODMAPs in foods
Fermentable
Oligosaccharide,
Disaccharide,
Monosaccharide
And
Polyols
Small intestine
Water
FODMAPs may draw water into the small intestine and cause diarrhoea
Digestion
FODMAPs may go into large intestine undigested
Large intestine
Gas
Bacteria
FODMAPs are fermented by bacteria and form gas
Compromised gut function?
FODMAPs may worsen symptoms of exercise-associated GI problems by compromising gut function
• Pain
• Bloating
• Visible abdominal distension
• Other symptoms

ACG recommends fiber for overall symptom improvement in IBS .patients

ACG suggests probiotics, taken as a group, to improve global symptoms as well as bloating and flatulence in IBS patients

ACG suggests against the use of prebiotics and synbiotics for overall symptom improvement in IBS .patients

Prebiotics, Probiotics & Synbiotics



Exercise

ACG suggests exercise for overall symptom improvement .in IBS patients
Studies suggest that physical activity protects against (GI) symptoms
Exercise bears an inverse relationship with colonic transit time

Non Pharmacological Therapy

- **Patients should be advised to:**
  - Increase physical activity
  - Eat regularly without missing meals
  - Fluid intake (mainly water) should be increased (2 liters per day)

Pharmacological Therapy

I. Anti-spasmodics:

1. Mebeverine hydrochloride
2. Peppermint oil

Mechanism of action:

- Both drugs are direct relaxants of intestinal smooth muscle, and relieve pain in irritable bowel syndrome
- **Dose of Mebeverine:**

  200 mg twice daily

- Mebeverine is contra-indicated in paralytic ileus.

II. Laxatives

A. If the patient complains of constipation osmotic laxatives are the best laxatives in IBS

Examples:

- Milk of magnesia
- Macrogol
- Magnesium hydroxide

N.B: Lactulose is not used in these cases

- **Examples of other classes of laxatives:**

1. Bulk forming laxatives e.g. methyl cellulose
2. Selective 5 HT4 receptor agonists e.g. prucalopride
3. Softening laxatives e.g. Docusate sodium and liquid paraffin.
4. Stimulant laxatives e.g. Bisacodyl and senne.
5. Opioid receptor antagonists e.g. Naloxegol

B. Patients who have not responded to osmotic laxatives and laxatives from the different classes and who have had constipation for 12 months can be treated with Linaclotide.

Linaclotide:

- **Kinetics:**
  - Not absorbed into the systemic circulation
  - Linaclotide is metabolized within the GIT to an active metabolite. Both are degraded within the intestinal lumen into naturally occurring amino acids.
  - The drug is excreted via faeces.

- **Mechanism of action of Linaclotide:**

  - Linaclotide is used to treat irritable bowel syndrome with constipation
  - Works by ↑ fluid in intestine.
  - Linaclotide: is an agonist on guanylate cyclase-c. It has a local effect on the luminal surface of the intestinal epithelium.
  - Linaclotide increases cGMP, and this stimulates the secretion of chloride and bicarbonate into the intestinal lumen, via activations of (CFTR) cystic fibrosis transmembrane conductance regulator ion channel, so the release of intestinal fl ↑ and there is decrease in visceral pain

Side effects:

- Diarrhea
- Abdominal distension

III. Anti-diarrheal drugs:

- Loperamide hydrochloride (an opioid receptor agonist in GIT) is the first line choice for relief of diarrhea.
- The drug does not pass the blood brain barrier and has neither analgesic properties nor potential for addiction.

- **Mechanism of action:**
  - Loperamide decreases mass colonic movements and the gastro colic reflex.

- **Dose:** 2 mg one to four times daily.

IV. Anti-depressants

A. Low dose of tricyclic antidepressants (e.g amitriptyline or despiramine) 10-15 mg/d are used.

At these doses, these drugs have no effects on mood.

Mechanism of action:

- They decrease the abdominal pain by altering of visceral afferent information.
- They have anti-muscarinic properties, so they decrease the GIT motility secretions reducing stool frequency and liquidity.

B. A selective serotonin reuptake inhibitor can be given in those who do not respond to a tricyclic anti-depressant.

Examples: escitalopram ,fluoxetine

C. Psychological intervention can be offered to patients who have not relief of IBS symptoms after 12 months of drug treatment.

Psychopharmacology

- Most of the medications that clients receive are intended to alleviate the **physiological symptoms** and associated pain related to the specific medical condition.
- **Antidepressant drugs may be given to clients who exhibit symptoms of depression for example**
  - Sertraline (selective serotonin reuptake inhibitors SSRI)
  - Tricyclics as amitriptyline

- **Low dose antipsychotics used anxiolytics and has antiemetic effect for example**

  - **Sulprid (antipsychotic) :**

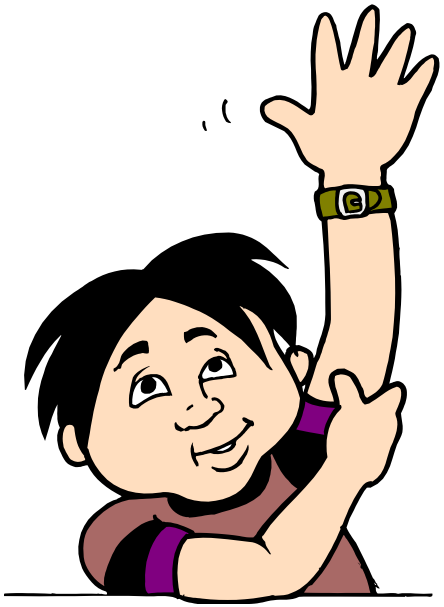
    It was proved that sulpirid is more effective in IBS as it reduced the **syndrome** by 85% (basic therapy by 10%), relieved abdominalgia, anxiety, depression, corrected **stool**. As to disbacteriosis, sulpirid effect was weak.

- **Antianxiety medications** are used to relieve anxiety, facilitate the client's daily functioning, and enhance the client s ability to participate in therapy.
  - **Benzodiazepine or BZD derivative (short duration not more than 6 weeks).**

REFERENCES

- Andreoli and Carpenter's Cecil Essentials of Medicine (8ty edition)
- Toronto Notes 2017
- Stasi C, Bellini M, Bassotti G, Blandizzi C, Milani S. Tech Coloproctol. 2014. Serotonin receptors and their role in the pathophysiology and therapy of irritable bowel syndrome.
- Drossman DA, Toner BB, Whitehead WE, Diamant NE, Dalton CB, Duncan S, Emmott S, Proffitt V, Akman D, Frusciante K, Le T, Meyer K, Bradshaw B, Mikula K, Morris CB, Blackman CJ, Hu Y, Jia H, Li JZ, Koch GG, Bangdiwala SI. Cognitive-behavioral therapy versus education and desipramine versus placebo for moderate to severe functional bowel disorders.
- Roy-Byrne P, Davidson K, Kessler R, Asmundson G, Goodwin R, Kubzansky L, Lydiard B, Jane Massie M, Wayne K, Laden S, Stein M. Anxiety disorders and comorbid medical illness.
- Komarov F, Rapoport S, Ivanov S, Kharaian L, Kolesnikov D, Kurikov A [Sulpiride treatment of irritable colon syndrome], Klin Med (Mosk) 2000;78(7):22-6.

Questions?



Thank You